11. Method of using one ester of the formula (I) to (V)

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 $B \stackrel{OR^1}{=} OR^2$

OR3

1.

ORI

OR²

(II)

(I)

 $O = P - OR^{1}$ $O = OR^{2}$

OR3

(III)

OR1

OR2

(IV)

R¹, R², R3, R4 are identical or different and each, independently of one another, are a liniear or branched-cain C₁- to C₄-alkyl, (-CH₂- CH₂-O)_n-CH₃ with n=1 to 3, a C₃ to C₆-cycloalkyl, an aromatic hydrocarbon group which in turn can be substituted, with the proviso that at least one of the groups R¹, R², R³ or R⁴ is (-CH₂-CH₂-O)_n-CH₃ with n=1 to 3

as a solvent in electrolyte systems for Li-ion storage cells.

Method according to claim 11, wherein the compound is one wherein R¹, R² and, where present, R³ and/or R⁴ are identical and are -CH₂-CH₂-O-CH₃ or (-CH₂-CH₂-O)₂-CH₃.

13. Method of using at least one of the compounds of formulae (Ia) to (Va)

$$B (- OCH_{2} - CH_{2}OCH_{3})_{3}$$

$$O = C (- OCH_{2}CH_{2}OCH_{3})_{2}$$

$$P(- O - CH_{2} - CH_{2} - O - CH_{3})_{3}$$

$$P(- O - CH_{2} - CH_{2} - O - CH_{3})_{3}$$

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and

as a solvent in electrolyte systems for Li-ion storage cells.

14. Method according to claim 11, wherein LiPF₆
LiBF₄, LiClO₄, LiAsF₆, LiCF₃SO₃, LiC(CF₃SO₂)₃, LiC(CF₃SO₂)₂,
LiN(SO₂F)₂, LiN(CF₃CF₂SO₂)₂, LiAlCl₄, LiSiF₆, LiSbF₆ or mixtures of two or more thereof are employed as a conducting salt.

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M. (12) J. (2) M. (12) (2) (2)

15. A composition comprising:

- (A) at least one compound of formula (I) to (V) as defined in claim 11, and
- 20 (B) a conducting salt selected among:

LiPF₆, LiBF₄, LiClO₄, LiAsF₆, LiCF₃SO₃, LiC(CF₃SO₂)₂, LiN(CF₃SO₂)₂, LiN(CF₃SO₂)₂, LiN(CF₃CF₂SO₂)₂, LiAlCl₄, LiSiF₆, LiSbF₆ and a mixture of two or more thereof.

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A composition as claimed in claim 15, wherein the compound (A) is selected among the compounds of formulae (Ia) to (Va), as defined in claim 3 and a mixture of two or more thereof, and the conducting salt (B) is LiBF4.

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17. An Li ion storage cell comprising at least one ester as defined in claim 11.

- 19. Method of using a composition as claimed inclaim 15, as an electrolyte system in Li-ion storage cells.
- 20. A process for preparing an ester of formula (I) to (V), as defined in claim 11, characterized in that a chloride is employed as a starting material and a trialkyl amine is used as a scavenger for HCl formed during the preparation of the ester.

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C)